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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
BULLOCK JR, LEWIS ALEXANDER

ART UNIT	PAPER NUMBER
2126	27

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/235,156	Applicant(s) SUSSER ET AL.
	Examiner Lewis A. Bullock, Jr.	Art Unit 2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 23-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 23-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *23,26* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 and 23-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Java Card 2.0 Programming Concepts" by SUN.

As to claim 1, SUN teaches a small footprint device (java card / smart card) comprising: at least one processing element (virtual machine / operating system process) (pg. 3, Lifetime of the Virtual Machine) configured to execute groups of program modules (applets) in separate contexts (pg. 7, "...applets are isolated from each other." Pg. 2, "Each applet is an independent entity with its own state and functionality."), objects of a program module (objects instantiated by an applet) associated with a particular context (pg. 3, "Every object on the card is owned by the applet which instantiated it. The owning applet always has full privileges to use and modify the object."); and a context barrier (applet firewall) for separating and isolating the contexts (pg. 7, "To create a secure and trusted environment, applets are isolated from each other. An applet firewall prevents one applet from accessing the contents or behavior of objects owned by other applets."), the context barrier configured to control object-oriented access of a program module (applet) executing in one context to information (object) and/or a program module (applet) executing in another context (pg.

2, "However, Java Card provides facilities to support more sophisticated scenarios in which multiple applets can discover each other, communicate, and share data in a limited manner, while still maintaining protection from each other in the form of a firewall between applets."), the context barrier further configured to prevent the access if the access is unauthorized (pg. 7, "If an applet does not have sharing privileges for an object, any attempt to invoke an instance method or access the object's contents will throw a SecurityException...") and enable the access if the access is authorized (via Unrestricted Sharing or Restricted Sharing) (pg. 8); and a global data structure (JCRE) for permitting one program module (applet) to access information from another program module (applet) by bypassing the context barrier (applet firewall) (pg. 7-8, "However, it is necessary to allow exceptions to this restriction. The JCRE must be able to invoke methods on applets..."; pg. 2, "However, Java Card provides...form of a firewall between applets."). However, SUN does not explicitly mention that the device has memory and that the context barrier uses the memory. It is well known to one of ordinary skill in the art that a device has memory and therefore obvious that the device would have memory for storing program modules and other functionalities of the device such that the firewall protects these memory regions from being accessed.

As to claim 32, reference is made to a method that corresponds to the device of claim 1 and is therefore met by the rejection of claim 1 above. However, claim 32 further details the device includes a processing machine wherein the program modules

are executed on. It is obvious that the processing element (virtual machine) of claim 1 is the processing machine of claim 32.

As to claim 34, refer to claim 1 for rejection. However, claim 34 further details the creating of the global data structure. It is obvious to one of ordinary skill in the art that since the teachings of SUN have a global data structure that it is created.

As to claim 35, refer to claim 1 for rejection. However, claim 35 further details the steps of creating a global data structure; permitting one program module to write information to the global data structure; and having at least one other program module read information from the global data structure thereby bypassing the context barrier. SUN teaches permitting one program module (applet) to write information (method invocation / sending bytes and receiving bytes) to the global data structure (JCRE), and having at least one other program module (applet) read information from the global data structure thereby bypassing the context barrier (applet firewall) (pg. 2, "However, Java Card provides facilities to support more sophisticated scenarios in which multiple applets can discover each other, communicate, and share data in a limited manner, while still maintaining protection from each other in the form of a firewall between applets."; pg. 8, "For method invocation operations, the JCRE remembers the old context, and performs an applet context switch to allow the code in the object's applet to function correctly and with expected security restrictions."; pg. 14-16).

As to claims 36 and 37, reference is made to a computer program product that corresponds to the device of claim 1 and is therefore met by the rejection of claim 1 above.

As to claims 38 and 39, refer to claims 36 and 37 for rejection. However, claim 38 further details permitting one program to access information from another program by bypassing a context barrier using a global data structure. SUN teaches permitting one program module (applet) to access information (method invocation / sending bytes and receiving bytes) from another program module (applet) using the global data structure (JCRE) (pg. 2, "However, Java Card provides facilities to support more sophisticated scenarios in which multiple applets can discover each other, communicate, and share data in a limited manner, while still maintaining protection from each other in the form of a firewall between applets."; pg. 8, "For method invocation operations, the JCRE remembers the old context, and performs an applet context switch to allow the code in the object's applet to function correctly and with expected security restrictions."; pg. 14-16).

As to claim 40, reference is made to a computer wave that corresponds to the device of claim 1 and is therefore met by the rejection of claim 1 above.

As to claim 41, refer to claim 40 for rejection. However, claim 41 further details permitting one program to access information from another program using the one

global data structure. SUN teaches permitting one program module (applet) to access information (method invocation / sending bytes and receiving bytes) from another program module (applet) using the global data structure (JCRE) (pg. 2, "However, Java Card provides facilities to support more sophisticated scenarios in which multiple applets can discover each other, communicate, and share data in a limited manner, while still maintaining protection from each other in the form of a firewall between applets."; pg. 8, "For method invocation operations, the JCRE remembers the old context, and performs an applet context switch to allow the code in the object's applet to function correctly and with expected security restrictions."; pg. 14-16).

As to claim 42, refer to claim 1 for rejection. However, claim 42 further details the transmitting of a code over a network wherein the code is instructions for implementing a global data structure for bypassing a context barrier. It is obvious that the firewall and the JCRE has program code in order to function on the java card system. However, SUN does not teach that the code is sent over a communications link. It is well known to one of ordinary skill in the art that computer code is downloaded from a developer system or server system to an implementation system or client system. Therefore, it is obvious to one skilled in the art at the time of the invention that the carrier wave code of the firewall and JCRE is shipped or downloaded from a server system to a client system to be implemented.

As to claims 23-26, SUN teaches that each applet has its own context (Applet execution context) (pg. vii, Terminology) and that the applets are separated by an applet firewall (pg. 7) and an applet can access another applet and its object by the JCRE (pg. 7-8). It is well known to one of ordinary skill in the art that an execution context has a memory space or name space. Therefore, it is obvious that the applets have their separate memory spaces or name spaces for each applets execution. It is also obvious that since an applet can access another applet via the JCRE that the multiple applets can access one another through the JCRE when allowed.

As to claims 27-31, SUN teaches the context barrier (applet firewall) prevents access from a principle (applet) in one context to an object in a different context (applet) (pg. 7, Applet Isolation and Object Sharing, "An applet firewall prevent one applet from accessing the contents or behavior of objects owned by other applets."; pg. 2, Multiple Applets, "However, Java Card provides...in which multiple applets can discover each other, communicate, and share data in a limited manner, while still maintaining protection from each other in the form of a firewall between applets."). It is obvious that since the context barrier prevents object access to an applet not owning the objects (pg. 7) that the context barrier enforces a security check on the applet accessing of the object. It is also obvious that the security check involves name / memory space agreement since the applet can only access objects within its execution context and it is well known to one of ordinary skill in the art that an execution context has a memory space or name space.

As to claims 33, SUN teaches the applet firewall prevents one applet from accessing the contents or behavior of objects owned by other applets (pg. 7, Applet Isolation and Object Sharing) and that when one applet invokes another applet's objects, the JCRE performs applet context switch to allow the code in the objects applet to perform the method invocation operation (pg. 8, Applet Isolation and Object Sharing). Therefore, it would be obvious that the firewall prevents access from a principal to an object unless they are on the same context and unless they access the JCRE for allow the access.

Response to Arguments

3. Applicant's arguments filed 6/10/03 have been fully considered but they are not persuasive. Applicant argues that in regards to all amended claims the cited art does not teach or suggest all claim limitations. Applicant states that the invention deals with object-based access and states the prior art objects as performing code based access as the difference in not teaching or suggest all of the claim limitations. However, the examiner cannot find any disclosure within the cited art that the access is code based. Sun teaches that applets are objects (pg. 2) and the applet firewall prevents one applet from accessing the contents or behavior of objects owned by other applets and that it maintains the protection of applets (pg. 2 and 7). Hence, the communication between an applet and an object is from one object to another. Futhermore, as detailed by Applicant in defining what a class and an object are, objects are themselves object

oriented programming code that is structured in a class. Therefore, the objects are code-based also.

Applicant then points out to other limitations in the specification as to showing the difference in the prior art to the invention. For instance in the specification at page 11, lines 16-20, and the appendix of the application. However, under the M.P.E.P. 2111 practice, the examiner is giving the broadest possible interpretation in examining the claims. Any limitations in the cited portions that are not explicitly detail in the claims as written should not be argued since these limitations were never part of the claim.

Applicant argues that the security checks may use the identity of the principal, the identity of the entity, and/or the type of action, but no mention is made of basing the security check on the applet code. The examiner disagrees. The examiner has assumed that Applicant is basing these arguments to dependent claims 27-31 and 33. In reviewing those claims, Applicant indicates that the program modules comprise at least one of a principal or an object and the context barrier enforces security checks on at least one of a principal, an object, and an action. The examiner has mapped the program modules to the applet and since the applet is accessing an object it is a principal. The prior art clearly states that the applet firewall ensures that no other applet may use, access, or modify the contents of an object owned by another applet except as described in this section. Therefore, there must be a security check on either the principal or the access action in order for the firewall to allow an applet to access, use, or modify the contents of an object.

Therefore, since the prior art still meets the claims as disclosed the rejection is maintained.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (703) 305-0439. The examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (703) 305-8498. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0286.

lab
July 22, 2003

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100